WHAT IS CLAIMED IS:

1. A structure for scavenging ions or charged molecules in integrated circuitry comprising a material capable of reacting with ions or charged molecules that is proximate a source of contaminating ions or charged molecules.

2. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules generates an electric field.

3. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules is selected from the group consisting of a metal, an inorganic semiconducting material, a organic semiconducting material, an organometallic semiconducting material and an ionic fluid.

4. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules forms a substantially flat sheet.

5. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules forms a substantial ring around a source of ions.

6. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules forms a substantial barrier between an integrated circuit and an external source of ions.

7. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules forms a substantial barrier between two or more components of an integrated circuit.

8. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules forms a substantial barrier between two or more lines of an integrated circuit.

9. The structure according to claim 1 wherein the integrated circuit is implanted in animal tissue.

10. The structure according to claim 1 wherein the integrated circuit is suspended in an ionic solution.

11. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules is further capable of monitoring ion levels.

12. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules further comprises a MOS gate.

13. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules substantially forms an electrode.

14. The structure according to claim 1 wherein the material capable of reacting with ions or charged molecules is placed substantially at the interface between an insulating dielectric and a metallization layer operably linked to an electrode.